All the muscles of the body are represented both in the cerebrum and cerebellum, though in different order; the convolutions of the hemispheres, being the highest centres, potentially embrace all the lower, and hence represent the entire body, including heart, bloodvessels, and viscera.

The two cerebral hemispheres correspond in function, although movements of the two sides of the body are represented in different order in each side of the brain; in other words, convolutions similarly situated will not necessarily coincide in function.

In most people the left side of the brain is the leading (motor) side—the side of the so-called 'will,' and the right is the automatic (motor) side; . . . . but the right may be the *leading* side for perception—educated sensations.

In general terms the anterior portion of each hemisphere is more largely motor; while the posterior, inferentially, principally serves the sensory aspect.

The brochure is dedicated to Hitzig and Ferrier, whose experiments are repeatedly referred to. A delicate question of priority may be considered as being raised by the statement that the author, "for more than ten years, and before the experiments of Hitzig and Ferrier were made, held that convolutions contain nervous arrangements representing movements." The labors of these gentlemen, however, are mentioned in the highest terms, and declared to be of inestimable value for the furtherance of clinical medicine, comparative anatomy, and physiology.

One point of practical importance to medical writers is brought forward in the form of a suggestion or outline of the manner in which convulsions should be observed and described.

"After noting the part in which the fit begins, we have to observe how the spasm spreads (the 'march of the fit'), and this for two purposes. We have not only to learn *how much* of the body is involved in the spasm, but also to note the *order* in which the several parts involved are affected. For example, we have not only to report of a case that the spasm 'affected the whole of one side of the body,' but also that 'the spasm began in the hand, spread *up* the arm, next took the face, and then passed *down* the leg.' We have to note not only the range of a fit, but the *order* of development of movements, one after another, in that range. Or, speaking now of the nerve centres, we have to study convulsion not only to learn what particular movements are represented in a nervous centre (anatomical localization), but also to learn the particular order in which those movements are therein represented (physiological localization)."

Did space permit, a number of other interesting topics might be referred to, such as aphasia and the physiology of language, that we would gladly discuss; suffice it to say, that the name of the author may be accepted as sufficient guarantee for the quality and character of the work. F. W.

ART. XXXIII.—*A Course of Practical Histology: being an Introduction to the Use of the Microscope.* By EDWARD ALBERT SCHÄFER, Assistant Professor of Physiology in University College, London. 12mo. pp. 304. Philadelphia: Henry C. Lea, 1877.

THIS is a small octavo volume of about 300 pages, illustrated by engravings on wood, and is a very complete and thorough guide to the study of practical histology. The author shows himself to be entirely "au courant" with the latest additions to microscopic work, and the directions for preparing the different specimens are full and clear. The book contains an introductory, twenty-one chapters devoted to the study of the various normal tissues of the body, the two on the muscular and nervous tissues being especially good, and an appendix. On page 22 of the Introductory we notice directions for making a good logwood staining solution. In the chapter on the Blood, is figured an apparatus for maintaining a constant temperature under the microscope, and a very complete account is given of its application in the examination of the blood. A good point is made in referring to the action of water upon both white and red blood-corpuscles, and the advisability of dissolving what reagents are to be used either in salt solution or in fresh serum instead of water. Reference is also made to the action of chloroform vapour, and a figure of the apparatus for its conduction is given. This chapter is very complete. Throughout the book frequent reference is made to small practical points, which are very useful. Such, for instance, is the explanation of why iodized serum is used for examining epithelial tissues, and how to remove glycerine which has accidentally gotten upon the upper surface of the cover-glass. In the chapter on connective tissue, reference is made to the difficulty of securing a film delicate enough for observation, owing to the presence of bundles of white fibres, and to the consequent employment of the method of localized œdema by means of hypodermic injection of a salt solution. A good application is made of the silver method of von Recklinghausen in rendering distinct the pellucid intermediate substance of connective tissue, and an exceedingly clear account is given of the appearances obtained by this method when applied to the subcutaneous connective tissue of the limb of a rabbit, every step in which process is minutely detailed. In the next chapter is a good description of the gold method of coloring cell protoplasm as applied to cartilage, and a drawing is given of a warming apparatus for maintaining portions of tissue after treatment by the gold method at a constant, raised temperature. In the chapter on muscular tissue we meet with a brief but very clear consideration of the examination of muscular tissue by polarized light, the living muscle of the water-beetle being recommended for the purpose.

Chapter VIII. treats of the bloodvessels, and contains an excellent description of the process of imbedding various tissues and of the method of cutting thin sections. Here we have also a clear account of the method of injecting the bloodvessels as well as directions for the preparation of the injection mass, and the precautions to be employed in its use. In the chapter on the serous membranes is mentioned a plan for injecting the lymphatics of the diaphragm during life, which very often fails of success, as we know from experience; but when successful certainly gives very beautiful specimens. In speaking of the skin we are glad to see recommended the plan of hardening the specimen in the spirit and chromic acid mixture, the alcohol being an excellent preventive for the breaking off of the epidermis, which is apt to occur when the skin is hardened by chromic acid alone.

The author advises imbedding in cacao-butter for spongy tissues like the lung, as it is difficult to cut these sections unless the interstices of the tissue are filled rather firmly. The only objection to this is that the process of hardening takes a considerable time. Very full directions are given for preparing the nerves of the intestinal canal for examination, and also of large sections of the brain by Sankey's method, which we agree with the author in regarding as probably the most satisfactory one. The last two chapters are taken up with a description of the methods of preparing the different parts of the eye and ear for examination, and the appendix contains descriptions of some of the additional instruments employed in microscopy, among them a micro-photographic apparatus.

The value of the book lies in its very practical nature, and it can, therefore, be earnestly recommended as a useful guide in the elementary study of histology.

C. S. B.